

Docket No. 24-1392

In the
United States Court of Appeals
For the
Ninth Circuit

ALIVECOR, INC.,

Plaintiff-Appellant,

v.

APPLE INC.,

Defendant-Appellee.

*Appeal from a Decision of the United States District Court for the Northern District of California,
No. 4:21-cv-03958-JSW · Honorable Jeffrey S. White*

APPELLANT'S REPLY BRIEF
[REDACTED]

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CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1, Plaintiff-Appellant AliveCor, Inc. states that it has no parent corporation and no publicly held corporation other than OMRON Corp. owns more than 10% of AliveCor, Inc.

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PRELIMINARY STATEMENT

Apple’s answering brief (“AB”) rests on a critical mischaracterization of this case. Apple claims repeatedly (AB 4, 13, 44-46, 66-67) that it cannot report two streams of heartrate data at the same time, and the courts cannot thwart its innovation in picking a better one. However, AliveCor’s position below (7-ER-1519–26) and in its opening brief (OB 43-44) is that the record shows Apple easily could have allowed third parties to choose which heartrate algorithm to use in their apps, given the algorithms ran in parallel. Apple’s *only* reference to this possibility is one sentence where Apple notes (AB 45) that, under AliveCor’s theory, “Apple’s engineers would have had to code the functionality to show two heartrate data sets at once or to give wearers and developers an ability to toggle between sets.” Apple then spends the next several pages responding to the first possibility (a red herring), while completely ignoring the second (AliveCor’s actual argument). The reason for Apple’s dodge is that *all* of the evidence shows it would have been a negligible task for Apple to allow app developers to choose between HRPO and HRNN. 7-ER-1519–26. Indeed, Workout Mode toggled between the two for a substantial period of time.

Focusing on AliveCor’s actual argument, Apple’s arguments fall apart. Given Apple never showed that adding HRNN required gating off HRPO, a reasonable juror could find that gating off HRPO was not part of the supposed

product improvement. Apple’s only legal rationale for lumping the two together—that “switching” the output from HRPO to only HRNN was integral to improving Workout Mode—is clearly in dispute and cannot be the basis for treating the separate conduct of gating off (and then removing) HRPO as immune from antitrust scrutiny.

Apple’s paean to innovation (AB 2) only confirms the district court’s error in rejecting AliveCor’s claims. Nothing in AliveCor’s theory stops Apple from innovating by adding any algorithm it wants to its devices. Apple repeatedly suggests (AB 1, 15-16, 33-35) that its change was good for app developers, competition, and consumers, but Apple’s suggestion not only conflates the addition of HRNN and the removal of HRPO; it also disregards the aftermarket here: watchOS heart rhythm analysis (“HRA”) apps. Apple does not dispute here and did not dispute below that this is the relevant aftermarket. Apple ignores that in this market, while there once was competition, there now is none—even from the innovator, AliveCor, that created the market. Consumers can choose Apple’s IRN feature or (for those with afib) nothing. Eliminating competition was not a necessary by-product of Apple’s innovation; it was Apple’s intentional choice. This choice is (at best for Apple) merely associated with a product improvement, and is subject to antitrust scrutiny under well-established law.

Apple is thus left with only extreme and legally baseless theories. Apple argues (AB 55-71) this is a refusal-to-deal case, even though it involves no actual refusal to deal, and courts uniformly analyze this kind of conduct under the product-improvement framework. *See, e.g., Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 1000 (9th Cir. 2010). More generally, according to Apple, even if it substantially harmed consumers by intentionally thwarting competition through gating off HRPO, and even if the cost of maintaining access to HRPO was virtually nothing, its conduct is not subject to antitrust scrutiny. This Court should reject Apple’s request for a dramatic expansion of the law to near-total antitrust immunity for all of its product decisions, and should reverse.

ARGUMENT

I. APPLE CANNOT CONTEST THAT DISCONTINUING HRPO GAVE IT 100% MONOPOLY POWER OF THE RELEVANT AFTERMARKET, RENDERING ITS CONDUCT ACTIONABLE

A. Apple Fails To Confront The Well-Established Law That Discontinuing Old Technology To Effectively Force Consumers To Adopt The Defendant’s New Technology Is Subject To Antitrust Scrutiny

As AliveCor explained (OB 31-32), “[a] monopolist’s discontinuation of its old technology may violate Section 2 if it effectively forces consumers to adopt its new technology.” *Allied Orthopedic*, 592 F.3d at 1002. Apple does not dispute—nor could it—that a monopolist effectively forcing consumers to adopt new

technology requires antitrust scrutiny *regardless of whether there is a product improvement*. Indeed, this principle assumes there is some form of new technology.

Apple misunderstands *Allied*'s standard when it argues (AB 55) that AliveCor must identify “distinct anticompetitive conduct” like “manipulation of patent exclusivity and generic-substitution laws” or an “illegal tying arrangement.” There is nothing in *Allied* suggesting such a limitation. Rather, *Allied* simply analyzed whether the design change at issue forced consumers to use the defendant's new technology, even though it had already concluded that the design change was a product improvement. 592 F.3d at 1002 (finding that third-party competitors were able to implement a simple workaround and sell generic sensors in competition with the defendant, and thus “Plaintiffs have provided no evidence that Tyco used its monopoly power to force consumers of pulse oximetry products to adopt its new OxiMax technology”). And the case *Allied* cited likewise simply discussed the elimination of old technology, not any further anticompetitive conduct. *See Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 287 n. 39 (9th Cir. 1979) (“[T]he situation might be completely different if, upon the introduction of the 110 system, [Defendant] had ceased producing film in the 126 size, thereby compelling camera purchasers to buy a Kodak 110 camera.”). Simply put, while the introduction of new technology may be considered a product

improvement, withdrawal of access to the old technology *is* associated conduct subject to antitrust scrutiny if it forces adoption of the new technology.

The two cases Apple cites (AB 50-52) likewise recognize no requirement of additional conduct beyond such withdrawal. The first case deals with the same introduction of the Kodak 110 camera addressed in *Berkey Photo*. See *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534 (9th Cir. 1983). It says nothing about discontinuation of old technology because, as *Berkey Photo* explained, Kodak did not discontinue anything. *Berkey Photo*, 603 F.2d at 287 n.39 (expressly distinguishing the scenario where Kodak hypothetically did so). Moreover, *Foremost* addressed tying claims because those were the plaintiff's asserted claims. 703 F.2d at 540. It *also* addressed illegal monopolization claims independent of tying, but found those deficient on the facts: "Foremost's complaint [did not] distinguish among the various product markets which comprise the 'amateur photographic market'" and thus "there [was] no occasion to address whether ... Kodak abused its monopoly power in the film market or used that power as a lever to create, or attempt to create, a monopoly in the markets for amateur still cameras or photographic chemicals or paper." *Id.* Here, in contrast, that is exactly what is alleged and what the evidence shows: Apple used its lock-in power from the smartwatch foremarket to monopolize the aftermarket for watchOS HRA apps. See OB 18-20.

The second case only confirms Apple’s analytical errors. *See New York ex rel. Schneiderman v. Actavis PLC*, 787 F.3d 638 (2d Cir. 2015). *Schneiderman* held that “neither product withdrawal nor product improvement alone is anticompetitive,” but “the *combination* of introducing Namenda XR into the market and effectively withdrawing Namenda IR” violated the antitrust laws. *Id.* at 653-54. That legal principle is straightforward and directly applicable here: a monopolist both introducing and withdrawing something “is anticompetitive when it coerces consumers and impedes competition.” *Id.* at 653. Apple attempts (AB 52) to distinguish *Schneiderman* on the facts, but they are directly analogous here: just as the defendant in *Schneiderman* discontinued a drug while introducing a new one, Apple introduced HRNN while withdrawing access to HRPO. And, as discussed below, just as the consumers in *Schneiderman* had no choice but to switch to the new drug, consumers in the aftermarket for watchOS HRA apps have no choice but to use Apple’s IRN—and consumers with afib are left with no choice at all. Thus, Apple’s conduct was just as (if not more) coercive than the defendant’s in *Schneiderman*—and the coerciveness of that conduct at least raises a disputed factual issue precluding summary judgment.

B. Apple Fails To Confront The Evidence That It Forced Consumers To Adopt Its Technology And Eliminated All Competition In The Relevant Market

Apple does not dispute that the district court failed to analyze whether Apple effectively forced consumers to adopt its new technology, and instead asks this Court to conclude as a factual matter there was no such forcing. However, Apple simply ignores the undisputed evidence that Apple’s discontinuation of HRPO forced *all* consumers in the aftermarket for watchOS HRA apps to use Apple’s IRN.

Apple suggests (AB 52-53) that third parties could use the Tachogram API, but as the district court recognized, “Tachogram API’s intermittent activation prevents a third-party app developer from continuously monitoring tachogram outputs to alert users to a potential Afib episode.” 7-ER-1479–1506 (Dkt. 285, hereinafter “Op.”); *see also* OB 34-36. And Apple does not even attempt to defend the district court’s inconsistent and mistaken assumption that Apple’s new algorithms “‘reported heart rates in the same fidelity level or even better ... as HRPO.’” OB 35 (quoting Op. 23). Thus, even if competitors could use the Tachogram API, the removal of HRPO indisputably forced consumer adoption of a new technology for HRA apps.

Not only did this force adoption of Apple’s new technology, it allowed Apple to monopolize the relevant aftermarket. Apple does not dispute that

competitors can only introduce a worse version of Apple's IRN. OB 21. More generally, Apple never explained how HRNN or Tachogram API could be used to create a competing HRA app, why no one has done so, or how this could be decided as a matter of undisputed fact on summary judgment.

Apple's assertion (AB 15-16) that thousands of apps utilize Workout Mode and/or Tachogram API to provide *some* form of heart-related product or service is a red herring. AliveCor acknowledges many apps do things *other than heart rhythm analysis*, *i.e.*, the clinically validated ability to detect the presence of a medically defined heart condition through passive, background monitoring. OB 12. But it has always alleged and argued—and Apple never disputed—that HRA apps have unique functionality and therefore constitute a separate aftermarket. 20-ER-5266–68. Likewise, while Apple notes (AB 52) there are other wearables with HRA apps, Apple does not contest—and never contested—there is a relevant *aftermarket* for HRA apps on watchOS. 20-ER-5216 (¶¶ 9-10).

In sum, it is undisputed the relevant aftermarket is watchOS HRA apps, and equally undisputed that (after Apple's withdrawal of access to HRPO) Apple's discontinuation of HRPO gave it 100% of that market. Apple thus not only "effectively force[d] consumers to adopt its new technology," *Allied Orthopedic*, 592 F.3d at 1002; it literally forced that adoption because there is no choice but

IRN. Indeed, this is the worst kind of coercion because for consumers with afib, there is no choice at all. 7-ER-1579–1581; 5-ER-944–949.

Finally, Apple’s assertion (AB 53) that it does not charge supracompetitive prices for its IRN is irrelevant to the question in this appeal, *i.e.*, whether Apple’s conduct is subject to antitrust scrutiny. If Apple wanted to argue on summary judgment that its conduct survives balancing of anticompetitive and procompetitive effects, it could have done so. If Apple wants to argue at trial that its conduct is not anticompetitive, it can. But what Apple cannot do is say that this Court should simply assume its conduct is not anticompetitive. Regardless, supracompetitive prices are not the only form of recognized anticompetitive effect; marketwide diminution of product quality and choice are also consumer harms the antitrust laws protect against, and that is exactly what happened here. *See infra* at 27-30.

Finally, evidence of Apple’s intent to eliminate watchOS HRA app competitors confirms there is at least a disputed fact regarding whether Apple forced consumers to use its technology. *See* OB 36-37 (citing *Allied Orthopedic*, 592 F.3d at 1001); *see also, e.g., Schneiderman*, 787 F.3d at 658 (rejecting “pretextual” justifications for withdrawing drug where evidence showed company was “‘trying to ... put up barriers or obstacles’ to generic competition”). Apple ignores the evidence from its own employees that—as in *Schneiderman*—

[REDACTED]. Instead, Apple asks this Court to ignore the contemporaneous evidence (and the summary judgment standard) in favor of generalized assertions that it could not have anticompetitive intent because IRN is free. However, Apple advertises IRN extensively because it generates extra Apple Watch sales. *See, e.g.*, 5-ER-1132 (¶ 8(b)(ii)). And beyond watch sales, Apple’s documents show the extraordinary value that Apple saw in monopolizing watchOS HRA apps, [REDACTED]

[REDACTED] 13-ER-3341–42. These motivations more than suffice for Apple to do exactly what it did—monopolize a previously competitive aftermarket for watchOS HRA apps, giving yet more power to Apple.

C. Apple’s Argument That This Is A Refusal-To-Deal Case Is Legal And Factual Misdirection

1. This Is Not A Refusal-To-Deal Case, As All Courts Considering Similar Conduct Have Recognized

Apple cannot save its anticompetitive conduct—forcing consumers to accept IRN as the *only* choice in the watchOS HRA app market—by labeling it a refusal to deal. To begin with, this label is nonsensical, as Apple is not refusing to deal. Apple itself claims (AB 7) that third parties *can* put competing apps on the watchOS. That includes AliveCor, as Apple admits (AB 63) it never

terminated AliveCor from Apple’s Developer Program nor excluded AliveCor’s Kardia app from the Apple App Store; it just killed SmartRhythm’s functionality. Thus, the issue here is not that Apple refused to deal with AliveCor, but that Apple changed its foremarket product in a manner that made aftermarket competition impossible, *regardless* of Apple’s willingness to host competing apps on its smartwatch.

As the seminal cases in this area show, changing a product that acts as a platform or interoperable complement to other products in a way to kill competition is analyzed as its own form of potentially anticompetitive conduct and *not* as a refusal to deal. For instance, *Allied* addressed a factual scenario similar to the one here, *i.e.*, a device manufacturer moved algorithms out of reach, so third parties could not compete for the sale of products that interoperated with that device. 592 F.3d at 994-95. This Court did not treat such allegations as a refusal to deal, even though it decided *Allied* several years after the Supreme Court’s *Trinko* decision on refusals to deal. *Id.* at 998-1003. Similarly, in *Foremost*, this Court analyzed whether “the creation of technological incompatibilities” violated the antitrust laws *not* under a refusal-to-deal rubric, but under the product improvement doctrine that *Allied* followed. 703 F.2d at 543-45. The D.C. Circuit likewise analyzed Microsoft’s product design decisions based on their anticompetitive effects. *United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C.

Cir. 2001). The Second Circuit did the same for the product design decisions in *Schneiderman*. 787 F.3d at 652-54; *see also Berkey Photo*, 603 F.2d at 281. The leading treatise also recognizes this distinction, noting the need to analyze product design changes and refusals to deal differently despite “superficial similarities” in the doctrines. Areeda & Hovenkamp, *Antitrust Law* ¶ 1757a (5th ed. 2024); *see also id.* § 1757c (“the most worrisome and tractable cases” are where the product design change “results in or is likely to result in domination of the secondary product market”).

Apple offers no argument for why this Court should depart from this well-established law. All (including Apple and *Amici*) agree that the Apple Watch is a platform designed to interoperate with third-party apps. The challenged conduct is the change in that platform product to gate off for years and then remove HRPO, all to eliminate relevant aftermarket competition. That is a classic case of a product change subject to the *Allied* analysis. *See, e.g., Surgical Instrument Serv. Co. v. Intuitive Surgical, Inc.*, 571 F. Supp. 3d 1133, 1141 (N.D. Cal. 2021) (“[Plaintiff] has not challenged [Defendant’s] decision to design a product with a use counter in the first instance, but the subsequent addition of ‘encryption and other countermeasures’ ... that prevent the use counters from being reset by third parties. This is therefore not a refusal-to-deal claim”).

Apple cites no precedent treating a platform’s product change as a refusal to deal. Rather, the cases Apple cites deal with the conventional situation of a non-platform defendant not selling to a rival,¹ or a platform refusing to allow a competitor on its platform at all.² And regardless of doctrinal labels, Apple cites no case ever permitting a monopolist in one market (here, smartwatches) to monopolize another market (here, watchOS HRA apps) with a product change in the first market that gave consumers no choice at all but to accept the monopolist’s product in the second (after)market. If Apple’s theory were adopted, it would upend the law and give platforms almost *carte blanche* to make product changes with the intent and effect of impeding or (as here) destroying competition in related markets.

¹ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 588-95 (1985) (owner of three ski mountains abandoned joint marketing venture with owner of fourth ski mountain); *Aerotec Int’l, Inc. v. Honeywell Int’l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (defendant refused to supply equipment parts to plaintiff).

² *Verizon Commc’ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 401 (2004) (defendant refused to share network pursuant to 1996 telecommunications act); *New York v. Meta Platforms, Inc.*, 66 F.4th 288, 305 (D.C. Cir. 2023) (“Facebook was prohibiting developers from using Facebook’s Platform to duplicate Facebook’s core products.”); *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1358 (Fed. Cir. 1999) (defendant refused to license some of its technology to plaintiff because plaintiff refused to grant licenses of its own technology to defendant). *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013), is likewise irrelevant because the plaintiff was barred by the statute of limitations from arguing that Microsoft “violat[ed] section 2 by seeking or maintaining a monopoly in some sort of market for applications generally or office suite applications more particularly.” *Id.* at 1069.

2. Even If Viewed Under A “Refusal” Framework, The Disputed Facts Demonstrate An Actionable Essential Facilities Claim

Even if this were characterized as a refusal to deal, summary judgment would be improper because there are material disputes of fact regarding whether Apple’s conduct is unlawful under the essential facilities doctrine. “Unilateral refusals to deal often concern an ‘essential’ facility.” *Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1209-10 (9th Cir. 1997) (citing *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973)). A plaintiff pursuing an essential facilities claim must prove “(1) that [defendant] is a monopolist in control of an essential facility, (2) that [plaintiff], as [defendant’s] competitor, is unable reasonably or practically to duplicate the facility, (3) that [defendant] has refused to provide [plaintiff] access to the facility and (4) that it is feasible for [defendant] to provide such access.” *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1128-29 (9th Cir. 2004) (footnotes omitted); *see also Aerotec*, 836 F.3d at 1184-85 (recognizing essential facilities as a basis for antitrust liability, which requires separate analysis from refusals to deal generally).

The record here shows material disputes of fact on each element.

First, Apple controls an essential facility—the HRPO algorithm on watchOS—for the relevant aftermarket: watchOS HRA apps. Apple does not contest that it has lock-in based monopoly power over Apple Watch users and

developers. Nor does Apple dispute that competitor app providers can only obtain users' heart rates, through watchOS algorithms, which Apple controls. 20-ER-5355–56 (¶¶ 274-75). Apple asserts (AB 69) that the essential facility at issue is “developer tools that can generate heartrate data” on *any* smartwatch. But as discussed *infra* at 25-27, this ignores economic reality *and* expert opinions the Court found admissible stating that the proper markets are smartwatches (foremarket) and watchOS HRA apps (aftermarket), as well as AliveCor's evidence showing that HRPO data was an essential input for watchOS HRA apps.

Second, AliveCor cannot reasonably or practically duplicate the facility because only Apple controls the watchOS algorithms. Apple does not contest this element.

Third, Apple has refused to provide third parties access to the HRPO data. Apple argues it suffices that third parties have access to *other* heartrate data, such as Tachogram API's outputs, but once again Apple ignores the undisputed aftermarket here is watchOS HRA apps. The essential facility to compete in that market is HRPO (or equivalent) data, and (as discussed *supra* at 7) Tachogram API does not allow for competition in that market.³ At the very least, this is a question for the jury.

³ Apple relies on *Flip Side Prods., Inc. v. Jam Prods., Ltd.*, 843 F.2d 1024 (7th Cir. 1988), where a concert promoter alleged a certain concert venue was an essential facility, but the court held it was not because there were other arenas

Fourth, Apple could obviously and feasibly provide access to HRPO data, as discussed *infra* at 19, 21-22, and as established by the fact that Apple provided this access for years.

Finally, Apple’s suggestion (AB 68) that AliveCor waived the essential facilities theory is baseless. Apple relies solely on AliveCor’s opposition to Apple’s motion to dismiss, but a legal theory is not waived simply because it was not pursued in opposition to a motion to dismiss. That is especially clear here because this is the same claim (monopolization under Sherman Act Section 2) and the facts supporting the essential facilities argument were always alleged in the complaint. *Shen v. Garland*, 109 F.4th 1144, 1158 (9th Cir. 2024) (noting “the familiar rule of appellate practice that an issue is adequately preserved for further review if the basic ‘claim’ was raised below and that appellants ‘are not limited to the precise arguments they made below’”) (quoting *Yee v. City of Escondido*, 503 U.S. 519, 534 (1992)). AliveCor was therefore entitled to—and did—argue on summary judgment that this case should be analyzed under the product design doctrine, not the refusal-to-deal doctrine, but *if* analyzed under a refusal framework, Apple’s conduct was actionable under the essential facilities doctrine. 5-SER-25–31; 7-ER-1545–50. The only authority Apple cites is obviously

available in the agreed market. *Id.* at 1033. Here, there are no other options available in the aftermarket for watchOS HRA apps, and at a minimum, this is a disputed factual issue.

inapplicable here, as it involved the waiver of challenges to jury instructions, and the authorities on which it relied were likewise limited to jury instructions. *See Crowley v. Epicept Corp.*, 883 F.3d 739, 748 (9th Cir. 2018).

II. APPLE CANNOT AVOID OR EXPLAIN AWAY THE DISTRICT COURT’S MULTIPLE ERRORS REGARDING ITS PRODUCT IMPROVEMENT AND ASSOCIATED CONDUCT ANALYSES

A. By Arguing It “Switched” The Algorithms, Apple Implicitly Concedes The District Court Erred In Finding Product Improvement Based On “Replacing” HRPO With HRNN

Apple does not defend the district court’s statement that Apple “replaced” HRPO with HRNN, which was the core premise for the district court’s decision. Op. 22 (“There is no genuine dispute that the replacement of HRPO with HRNN was a product improvement.”). This premise is false (OB 38-41) because HRNN did not “replace” HRPO, given that HRPO remained on the Apple Watch long after HRNN was added. Avoiding the word “replaced,” Apple instead asserts (AB 26) that it “switched” the algorithms it used. But this is a euphemism aimed at downplaying what actually and undisputedly occurred: Apple kept HRPO on the Watch, but gated off others’ access to it or its data (while Apple itself continued using it), and then later discontinued HRPO. OB 18; AB 14-15.

Under well-established law that Apple does not address, this specific conduct—not the addition of HRNN—must be evaluated to determine whether it was a supposed product improvement or the necessary result of the product

improvement. *See* OB 38-39 (citing cases); *see also* Areeda, § 1757c (liability when “the incompatibility is not essential to the improvement”). Apple does not respond to the simple point that if any design change can be lumped together with the supposed improvement, then Apple would have *de facto* antitrust immunity for blatantly anticompetitive design changes, as there are always some improvements to each iteration of Apple’s products and software. Apple suggests (AB 42) that looking at the specific conduct would “spell the end of the doctrine.” But the doctrine functions perfectly well by looking at whether the challenged conduct improved the product, as this Court has done. *See, e.g., Allied Orthopedic*, 592 F.3d at 1000-01 (analyzing whether the specific, challenged conduct that harmed competitors, “placing a digital memory chip in the sensor and moving the calibration coefficients from the monitor to the sensor,” improved the product). Indeed, the doctrine explicitly recognizes that the improvement must be examined separately from associated conduct, *see id.* at 999-1000, not lumping all conduct together as the supposed improvement.

In addition, Apple does not dispute AliveCor’s point (OB 46) that *what* constitutes the relevant design change is itself a disputed material fact precluding summary judgment. Apple asserts (AB 27, 42) that gating off HRPO was “part and parcel” of adding HRNN, but Apple cites nothing for this assertion or for the creation of a “part and parcel” test or how it is different than the “necessary

consequence” test. Regardless, Apple fails to explain how this factual question could be decided on summary judgment given the dispute over whether adding HRNN and gating off HRPO were in fact one product design change.

B. Apple Fails To Present Any Factual Evidence, Let Alone Undisputed Facts, To Show That Gating Off HRPO Was A Product Improvement Or A Necessary Consequence Of A Product Improvement

There is no evidence that gating off HRPO improved the Watch, and it is certainly not an undisputed fact. As AliveCor explained (OB 37; *supra* at 9-10), the intent and effect of gating off third-party access to HRPO was to thwart competition. It offered no battery power, memory, or processing savings because HRPO remained on the Apple Watch and ran in parallel to HRNN during every Workout Mode session. While these supposed savings were pivotal to the district court’s decision (Op. 24), Apple barely mentions them and *only* in the context of how “stor[ing]” and “report[ing]” HRPO data could affect battery, memory, and processing. AB 13-14, 45-56.

However, allowing third parties to choose between HRPO and HRNN would *not* require storing or reporting HRPO data in addition to HRNN data—it would be either/or. *See* 7-ER-1523. The only evidence on this point is that there would be essentially no cost in Apple allowing this choice. 21-ER-5639–5644 (¶¶ 21-27). Indeed, [REDACTED]

[REDACTED] 14-

ER-3692, 15-ER-3836–3837 (33:12-16, 176:6-177:20). Apple ignores this point entirely.

Furthermore, gating off HRPO was associated conduct not immune from scrutiny under the antitrust laws. If conduct is “associated” with the product improvement, but not a “necessary consequence” of the improvement, then it is not protected under *Allied*. Apple argues (AB 48) that “necessary consequence” was included in only one sentence, but it was the exact reason this Court concluded the incompatibility at issue was not associated conduct. *Allied Orthopedic*, 592 F.3d at 1002 (“The evidence shows that the OxiMax monitors’ incompatibility with R-Cal sensors was the necessary consequence of moving the calibration coefficients from the monitor into the sensor. Thus, the product improvement at issue in this case, not some associated conduct by Tyco, caused the incompatibility.”). Apple also fails to explain why conduct that is not a necessary consequence of an improvement—*i.e.*, the defendant could improve the product *without* engaging in the challenged conduct—should be immune from antitrust scrutiny. There is no legal or logical principle whereby a monopolist should be able to use the excuse of a product improvement to immunize all conduct, even if not required for the improvement, especially where (as here) that conduct monopolizes another market.

Apple proposes no other test for associated conduct. At times, Apple appears to suggest the conduct has to be unrelated (“distinct”), *see* AB 47, but no

court has said that, and it is literally the opposite of the meaning of the word “associated,” *i.e.*, related. At other times, Apple appears to recognize that the challenged conduct must be the “consequence[]” of or “integral” to the product improvement. AB 43. This language is only marginally different from the “necessary consequence” language this Court adopted in *Allied*, and which this Court should continue to follow.

But regardless of the precise language, under any test, gating off HRPO is associated conduct and there is at least a disputed factual question on this point. As discussed above, Apple could have maintained access to HRPO at virtually no cost, while still adding HRNN. Thus, gating off HRPO was not integral to or a consequence (let alone necessary consequence) of adding HRNN. Conduct is not integral to a product improvement or a consequence of that improvement where the improvement easily can be done without that conduct—which is what the undisputed evidence shows here.

Apple errs in attempting to equate the product with the product improvement. Apple asserts (AB 43) that because *it* defines the “product” as Workout Mode, “everything AliveCor challenges was an integral component of Apple’s improvement to that product.” However, Apple provides no explanation for how this Court can decide, on summary judgment, that Workout Mode is the product rather than the Apple Watch, which is the foremarket product consumers

actually buy and which *Apple itself* advertised as providing the functionality here. 7-ER-1540–44.

In any event, Apple’s argument is a *non sequitur*; if Workout Mode is the product, that does not mean everything in Workout Mode is integral to that product, let alone integral to the improvement in that product. None of the cases Apple cites (AB 43-44) adopts its extreme position that anything in the product is deemed integral and therefore immune once there is a product improvement. Indeed, Apple could just as easily define the product as the Watch, in which case all changes to the Watch supposedly would gain antitrust immunity. That is not and should not be the law.

As to the facts, Apple’s argument on this issue is a red herring. According to Apple (AB 44-46), gating off HRPO was necessary because Apple could not have reported two algorithms at once. But that is not what AliveCor argued is the but-for, competitive world. Rather, as discussed *supra* at 19, Apple could have allowed developers to choose which algorithm to use. Apple presented no evidence below and cites none here that there would be any difficulty in allowing developers that choice; the only evidence is that doing so would be simple and virtually costless. Thus, gating off HRPO is prototypical associated conduct—related to, but not remotely necessary for, the improvement.

C. Apple Fails To Present Any Factual Evidence, Let Alone Undisputed Facts, To Show That Discontinuing HRPO Was A Product Improvement Or A Necessary Consequence Of A Product Improvement

Apple likewise fails to present facts showing that later discontinuing HRPO was a product improvement or necessary consequence of an improvement. As discussed above, the only conduct that could be considered an improvement is adding HRNN. That is especially clear when considering the discontinuation of HRPO, which occurred long after Apple added HRNN to watchOS. Apple does not address how a *later* decision to remove HRPO can be considered “part and parcel” of the *earlier* decision to add HRNN. And Apple likewise ignores the point (OB 46) that there is at least a factual dispute regarding what is the allegedly anticompetitive design change. In any event, there is a disputed factual question whether the change—however characterized—was made with the intent or effect of improving the product. *See* OB 46-54. Apple’s assertion (AB 36) that the market could judge the improvement for itself is meritless, as Apple neither advertised the change nor gave any choice but to accept HRNN and IRN. *See supra* at 7-9.

Even if there were a product improvement, withdrawing HRPO was not a necessary consequence of introducing HRNN. Indeed, Apple does not explain how discontinuing HRPO was a *consequence* at all, given HRPO and HRNN *both* operated simultaneously in Workout Mode API for years. 21-ER-5556 (¶ 96); 16-

ER-4148 (173:2-14). Thus, even under Apple’s narrower definition of associated conduct, removing HRPO was associated conduct because it was not “integral” to adding HRNN—and there is at least a material factual dispute on this question.

While the district court suggested that simply having HRPO on the Watch would impact memory and battery life (Op. 24), the evidence does not support this conclusion (OB 51-53), and Apple does not even attempt to defend it. Instead, Apple argues (AB 45) that “stor[ing]” and “report[ing]” HRPO data at the same time as HRNN data would have negative effects. But this argument once again rests on the erroneous premise that AliveCor alleges Apple should have reported HRPO and HRNN data simultaneously, rather than what AliveCor actually alleges: Apple should have allowed developers to choose between the two. *See supra* at 19, 22. In short, there is no evidence—let alone undisputed evidence—that discontinuing HRPO was necessary or even beneficial for battery life, memory, or anything else.

III. APPLE’S ANTITRUST INJURY ARGUMENTS ONCE AGAIN IGNORE DISPUTED MATERIAL FACTS, AS WELL AS THIS COURT’S RULINGS ON THE PROPER WAY TO ASSESS MARKET OUTPUT

Antitrust injury consists of four elements: “(1) unlawful conduct, (2) causing an injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent.” *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1055 (9th Cir. 1999).

A plaintiff may assert antitrust injury from “[c]oercive activity that prevents [consumers] from making free choices between market alternatives,” as well as restraints that artificially erect barriers to market entry and protect lower-quality products. *Glen Holly Entm’t, Inc. v. Tektronix, Inc.*, 352 F.3d 367, 374 (9th Cir. 2003) (quoting *Amarel v. Connell*, 102 F.3d 1494, 1509 (9th Cir. 1996)). That is precisely what AliveCor alleged and the evidence shows here.

A. AliveCor Defined The Markets In Which Apple’s Anticompetitive Conduct Occurred: The Smartwatch Foremarket And The watchOS HRA App Aftermarket

Apple asserts (AB 72) that AliveCor never defined the “challenged conduct” relevant markets, but that is incorrect. As discussed *supra* at 8, AliveCor’s expert Dr. Cragg stated the relevant market is the watchOS HRA app aftermarket, where AliveCor and Apple competed. 20-ER-5216–16 (¶¶ 8-9). Apps in this aftermarket operate on the foremarket devices, *i.e.*, smartwatches or, alternatively, wrist-wearable devices. 20-ER-5286–5340. The district court admitted Cragg’s opinions.

Dr. Cragg showed that Apple possesses power in the relevant foremarket and has lock-in power over the aftermarket. 20-ER-5216 (¶¶ 10-12), 5318 (¶ 195), 5346 (¶ 253). He explained the challenged conduct (the algorithm change) occurred in the foremarket and eliminated competition in the watchOS HRA app aftermarket. 20-ER-5362–63 (¶ 287); 7-ER-1534–37.

Apple contends (AB 74) there is a “mismatch” between the market where the challenged conduct occurred and where the anticompetitive effects were felt, but the Supreme Court and this Court have held that conduct with the intent and effect of creating antitrust injury in an aftermarket gives rise to a valid antitrust claim. What matters is *power and effects in the aftermarket*; a defendant accused of aftermarket monopolization does not need monopoly power in any other market. *See Eastman Kodak Inc. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 465-71 (1992). To the extent a jury decides Apple’s practices were part of a scheme to obtain or maintain power in the relevant aftermarket, it “will have violated §2.” *Id.* at 483. Moreover, “courts should conduct market-definition inquiries based not on formalistic distinctions but on actual market realities.” *Epic Games, Inc. v. Apple, Inc.*, 67 F.4th 946, 978 (9th Cir. 2023); *see also id.* at 466-67. Therefore, “the relevant market for antitrust purposes can be an *aftermarket*—where demand for a good is entirely dependent on the prior purchase of a durable good in a *foremarket*.” *Epic Games*, 67 F.4th at 976. Apple provides no argument why this case is about anything but anticompetitive effects in the well-defined aftermarket.

The cases Apple cites (AB 74) not do not support its esoteric theory. In *Dreamstime.com, LLC v. Google LLC*, 54 F.4th 1130 (9th Cir. 2022), this Court expressly recognized the plaintiff could have asserted a claim based on anticompetitive effects “in a second, downstream market,” but the plaintiff

“expressly disavowed” such a theory. *Id.* at 1138-39. And in *FTC v. Qualcomm*, this Court reversed the district court’s finding (after a bench trial) in plaintiff’s favor not for improperly defining the relevant markets (CDMA and LTE modem chips), but for failing to analyze anticompetitive effects to Qualcomm’s competitors within those markets. 969 F.3d 974, 992-93 (9th Cir. 2020). *Qualcomm* is clear that the relevant market is “the market where competition is [allegedly] being restrained,” *i.e.*, where the anticompetitive effect occurs, not where the conduct takes place. *Id.* at 992 (alteration in original). Dr. Cragg clearly explained (via admissible opinions) that AliveCor’s injury occurred in the aftermarket where AliveCor and Apple compete (watchOS HRA apps). 20-ER-5363, 5370.

B. AliveCor Has Presented Proof Of Detrimental Effects On Competition In The watchOS HRA App Market

Apple recognizes that “reduced output, increased prices, or decreased quality” constitutes antitrust injury. AB 75 (quoting *Ohio v. Am. Express*, 585 U.S. 529, 542 (2018)). The evidence here shows exactly these types of injury, and at least a disputed fact for purposes of summary judgment.

First, regarding quality and price, AliveCor’s SmartRhythm was a higher quality product than Apple’s IRN, including because it can be used for people with afib, while IRN cannot. Apple does not offer a HRA app that continuously monitors for heart rhythm problems—indeed, Apple literally warns people of this

fact. 5-ER-944–49. As AliveCor showed, there was substantial incremental demand for continuous monitoring. 21-ER-5450–53.

Apple asserts (AB 76-77) that it has more users than AliveCor did, but number of users is obviously not the measure of market quality, especially given that consumers now have no choice but to use Apple’s IRN. Moreover, Apple argues (AB 76) that it does not charge for its IRN, implying antitrust injury can exist only when the defendant charges for its competitive product or raises prices for that product after eliminating competition. But this Court has explicitly rejected such an argument because there are multiple situations where a company might offer a “free” product but profit in other ways, such as (like here) by collecting data from use of those products. *See Epic Games*, 67 F.4th at 978-79.⁴ In any event, while AliveCor charged for its HRA app and Apple does not, eliminating higher-quality competitors raised the effective price of watchOS HRA apps due to the reduced consumer choice and lower overall quality. *See, e.g.*, 20-ER-5373 (¶ 310).

Second, the reduced output in the watchOS HRA app market is clear because the number of product options has declined to one: Apple’s IRN. *See supra* at 7-9;

⁴ *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192 (9th Cir. 2012), *see* AB 78, is not to the contrary. There, the plaintiff did not explain how the allegedly anticompetitive practice excluded rival sellers or raised entry barriers. *Id.* at 1201. Thus, it was immaterial if the complaint alleged reduced choice from the acts, because those allegations were not tied to any harm to competition. *Id.* at 1202.

OB 33-34. Apple argues (AB 75) there was only ever one competitor in the market at a time—first AliveCor and now Apple. But eliminating even a single competitor in a concentrated market can harm competition where, as here, it gives the defendant monopoly power. *See TransWeb v. 3M Innovative Props. Co.*, 812 F.3d 1295, 1309-10 (Fed. Cir. 2016). Moreover, Apple eliminated another nascent competitor—Cardiogram—from the market, and restrained any other developer’s ability to enter the market. 20-ER-5270, 5282, 5363; 2-SER-334 (30:20-22). Eliminating even nascent competitors violates the Sherman Act and is a well-established form of antitrust injury. *See, e.g., Microsoft*, 253 F.3d at 79.

Apple also suggests (AB 75) that more consumers use HRA apps now than pre-HRNN, but Apple errs in confusing what happened in the actual world with what would have happened in the but-for world. *Epic Games*, 67 F.4th at 983-84. A huge number of consumers (those with afib) cannot use IRN, yet could have used SmartRhythm and Cardiogram’s anticipated products. Similarly, consumers specifically looking for continuous monitoring will not use IRN (per Apple’s warnings), and [REDACTED]

[REDACTED] 13-ER-3342. Thus, in the but-for world, there

would have been even more watchOS HRA app users than in the actual world, defeating Apple's output argument. *Epic Games*, 67 F.4th at 983-84.⁵

CONCLUSION

This Court should reverse or vacate the district court's judgment and Order granting Apple's motion for summary judgment and remand for further proceedings.

⁵ Apple also asserts (AB 76) that competitors can enter the HRA app market because Apple gives developers access to the same tachogram data used by IRN, but as discussed *supra* at 7, 15, third parties cannot rely on that data to provide meaningful heart rhythm analysis, which is why none have done so. *Amicus* Empirical Health asserts (Br. 10) that it is able to "detect heart rhythm anomalies," but Apple has never claimed that Empirical Health offers a HRA app. And Empirical Health suspiciously omits afib from the list of conditions (Br. 8-9) it can allegedly detect using Apple's data. That is because it cannot.

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Respectfully submitted,

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FOR THE NINTH CIRCUIT**

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